



CITY OF NEWTON, MASSACHUSETTS

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Public Hearing Date:	January 28, 2008
Zoning and Planning Action Date:	March 24, 2008
Board of Aldermen Action Date:	April 7, 2008
90-Day Expiration Date:	April 27, 2008

TO: Ald. Brian E. Yates, Chairman, and
Members of the Zoning and Planning Committee
Planning and Development Board

FROM: Michael Kruse, Director of Planning and Development
Juris Alksnitis, Chief Zoning Code Official

SUBJECT: Petition #109-07 ZONING TASK FORCE recommending amendments to Section 30-5(b)(4), referred to as the three-foot grade change ordinance, by deleting the existing language and: (1) adding a provision defining structure in Section 30-1 to include retaining walls that exceed five (5) feet in height; (2) substituting language in Section 30-5(b)(4) to allow the Zoning Board of Appeals to grant a special permit for the construction of retaining walls that exceed five (5) feet in height; and (3) creating an ordinance to require the Engineering Division of the Public Works Department to review and approve a drainage plan for construction or alteration of single- and two-family residences that would increase impervious surface by the lesser of 5% or 500 square feet and for all other types of construction or alteration.

CC: Board of Aldermen
Mayor David B. Cohen
John Lojek, Commissioner of Inspectional Services
David Turocy, Acting Commissioner of Public Works
Lou Taverna, City Engineer

RECOMMENDATIONS: SEE "RECOMMENDATIONS" SECTION WITHIN.

The purpose of this memorandum is to provide the Board of Aldermen, Planning and Development Board, and the public with technical information and planning analysis which may be useful in the decision making process of the Boards. The Planning Department's intention is to provide a balanced view of the issues with the information it has at the time of the public hearing. There may be other information presented at or after the public hearing that the Zoning and Planning Committee of the Board of Aldermen will consider in its discussion at a subsequent Working Session.

I. BACKGROUND

Concerns have been raised over time regarding the intent and effects of Section 30-5(b)(4) requiring the approval of a special permit by the Board of Aldermen whenever proposed changes in grade exceed 3 ft. This provision was also identified by the Commissioner of Inspectional Services as needing better definition as well as review. This requirement applies to most development, but not to institutional uses under the Dover amendment (*MGL Chapter 40A: Section 3*)

Some attribute the origins of this requirement to a situation in the past where a grade change caused drainage impact upon an abutting property. The provision was adopted per ***Ordinance S-260, August 3, 1987***, as part of the major revision to the Zoning Ordinance adopted by the City at that time.

Inspectional Services Department interpretations over the years have held that this provision is not applicable to foundation excavations or to excavations leading to garages under residences. In some cases, developers have pushed the envelope of this interpretation seeking to justify major driveway and hillside excavations. A number of these petitions are filed after the fact, when observed by an inspector. On the other hand, modest grade changes marginally exceeding the 3 ft. standard, have been subject to the full special permit procedure and attendant costs. Given the various concerns associated with this requirement, it was included in the list of items to be addressed by the Zoning and Planning Committee Task Force.

Chaired by Ald. Ted Hess-Mahan, the Task Force convened working subcommittees, which then reported back to the Task Force over time on designated issues. Thereafter, the Task Force transmitted a set of reports to ZAP on the various items. The subject petition #109-07 reflects the Task Force report with respect to the “3 ft. grade change” provision. In addition, the following concurrent Task Force petitions, discussed in companion memoranda prepared by the Planning and Development Department, address certain zoning concerns as follows:

- #108-07 – 50% demolition provision
- #110-07 – Half story and dormers
- #111-07 – De minimis
- #126-07 – Definitions pertaining to “half story” and “dormer”

This memorandum looks at information and suggestions provided by the Task Force 3 ft. Grade Change Subcommittee (hereafter Subcommittee).

(SEE ATTACHMENT A – SUMMARY OF PROCEEDINGS).

II. CURRENT ORDINANCE

Section 30-5(b) states as follows:

In all districts, unless the use is otherwise permitted as of right, the Board of Aldermen may grant a special permit ...to use land, buildings and structures for one or more of the following purposes:

“(b)(4)The placement or removal of sod, loam, clay, gravel or stone, or other solid material, where the existing contours of the land are to be altered by more than three (3) feet, except when a special permit has been issued for construction under the terms of this ordinance.”

III. PROPOSED AMENDMENT

Although new language is not proposed at this time, the Subcommittee report suggests a number of remedies, including the following:

- (1) Amend the definition of “structure” in Sec. 30-1, to include any retaining wall higher than 5 ft.
- (2) Add a definition of an “earthen berm” and provide that a berm with a slope greater than 1:1 is considered a “retaining wall.”
- (3) Add a definition of “retaining wall” and describe method of measuring height. Such measurement to include terraced retaining walls in aggregate height unless terraces, exclusive of walls, are minimum 30 in. wide.
- (4) Delete Section 30-5(b)(4), eliminating the existing 3 ft grade change requirement.
- (5) Add requirement that retaining walls in excess of 5 ft. height require a special permit when proposed within setbacks.
- (6) Add a new provision enabling the Zoning Board of Appeals to review and grant special permits for retaining walls in excess of 5 ft. when proposed within setbacks.
- (7) Establish process requiring administrative review and approval by the Engineering Division of all construction or alterations of single- and two-family homes where the project increases impervious surfaces by more than a defined threshold.
- (8) Establish process requiring administrative review and approval by the Engineering Division of all other construction and alterations.

Should the Zoning and Planning Committee concur with the above elements, specific language amending the Zoning Ordinance will be needed for review and adoption by the Board of Aldermen.

IV. ANALYSIS

Definitions. The various definitional improvements suggested by the Subcommittee typically involve both a descriptive as well as a policy aspect. The Planning Department agrees that it would be helpful to provide and/or update existing definitions for terms such as “retaining wall”, “earthen berm”, and “structure.” These terms also may have technical definitions associated with building code construction standards. For the purposes of

zoning, the enclosed *ATTACHMENT B – SAMPLE DEFINITIONS*, illustrates a selection of definitions found in the zoning ordinances of other communities as compiled and published in *A Planners Dictionary*, American Planning Association. It is suggested that the affected agencies, including Engineering Division, Inspectional Services Department, and the Planning and Development Department work together with the Law Department to develop appropriate language for the above definitions for review and action by the Zoning and Planning Committee and the Board of Aldermen. As part of this work, it will be necessary to clearly define the technical measuring points pertaining to grades, tops of walls, and footings while also addressing questions whether maximum height or average height should be utilized.

Elimination of three-foot grade change special permit. The Subcommittee believes the Section 30-5(b)(4) special permit requirement has been utilized overly intrusively causing financial and procedural burdens for owners of properties solely with grade change conditions, which occur with some frequency given Newton's topography. The Planning Department concurs that over the years, a number of minor grade change situations have likely unnecessarily been put through the full special permit process. *File records indicate that during the period June 2003 – December 2007, 15 applicants have requested zoning reviews triggered solely by the three-foot grade change requirement.* Of these requests, three have come in due largely to landscaping projects involving stone steps, an outdoor swimming pool, patio areas and the like. The other cases, including the 6 new single-family homes on Kessler Way, have involved more extensive re-grading of one or more portions of a site. In the case of 121 Hartman Road, the Inspectional Services Department had previously put a stop work order on the project due to unsafe conditions caused by extensive excavation and proposed inadequate retaining walls.

In most communities, soil stability and drainage concerns are addressed by technical reviews conducted by engineering and building professionals. The 121 Hartman Road case illustrates the ability of the Inspectional Services Department and the Engineering Division to deal with such cases, including the more extreme situations. Deletion of the three-foot grade change special permit provision would reduce the special permit case load related re-grading cases only, but not affect any other project requiring other zoning reliefs from the Board of Aldermen. Moreover, to the extent that re-grading is a component of any project requiring site plan approval, the Board of Aldermen has the jurisdiction to subject such a plan to scrutiny and the discretion to grant or withhold approval. The Planning Department concurs that any drainage, soil stability or retaining wall matters caused by grade change of any scale, should be subject to technical review conducted by the coordinated reviews of the Inspectional Services Department and the Engineering Division.

It is also noted that Section 30-5(c)(1) states as follows:

In all districts, no land, buildings or structures shall be used except in conformance with the following:

- (1) Whenever the existing contours of the land are altered, the land shall be left in a usable condition, graded in a manner to prevent the erosion of soil and the alteration of the runoff of surface water to or from abutting properties, and shall be substantially landscaped.*

This provision applies to all development, including as-of-right projects, special permit projects, and uses protected by the Dover amendment. Any applicant, whether or not requiring a building permit would need to satisfy 30-5(c)(1). In particular, signoffs from the Engineering Division would be key prior to the granting of any building permit by the Inspectional Services Department. However, the Law Department advises that the “substantially landscaped” portion is too vague to be enforceable. In such case, should the three-foot grade change special permit provision be eliminated, the Board of Aldermen may wish to consider strengthening the landscaping component of (c)(1).

Effect in conjunction with existing zoning mechanisms. As noted by the Subcommittee, inclusion of retaining walls above 5 ft. high in the definition of “structure” would make such a wall subject to setback requirements. If adopted, no such retaining wall could be placed closer to a lot line than established in Section 30-15, Tables 1, 2, or 3, depending on the respective zone. However, retaining walls lower than and up to 5.0 ft. would be allowed within setbacks and without any special permit, subject to Engineering Division technical review, including drainage.

In addition, as discussed in Delegation of special permit granting authority below, the Subcommittee recommends the provision of a new special permit mechanism for retaining walls above 5 ft. in place of the current special permit applicable to three-foot grade changes. When taken together, the effect would be to increase the height from 3 ft. to 5 ft. at which a special permit is required and only when a retaining wall is proposed to be placed within a setback. No special permit would be triggered by any grade change, regardless of extent of alteration, not involving a retaining wall above 5 ft. high. This might be affected to some extent, depending on the definition of “earth berm” and whether or not such an earth formation might (or should) be classified as a “retaining wall” if it carries a slope steeper than 1:1 (i.e. 45%). In any event, the approach proposed by the Subcommittee would not address situations where grade alterations may be significant, without a “berm” type formation. As a result, this raises the question as to whether the City is prepared to fully de-regulate grade changes under zoning. Nevertheless, it is also noted that the Subcommittee reviewed the by-laws of 10 abutting cities and towns, and found only one, which referenced any zoning regulation addressing grade alterations. Malden includes in its dimensional requirements a provision that grades shall not exceed 25% and shall not include ledge cuts or retaining walls in excess of 6 ft.

In the opinion of the Commissioner of Inspectional Services, this type of regulation would be workable, ensuring that large retaining walls, i.e. above 5 ft. high, would not be utilized absent a special permit in the most visible areas near a residential or non-residential use. The Inspectional Services Department also notes that any measurement of retaining walls must also take into consideration technical structural criteria such as the required depth under grade and also depth of footings. The Planning Department and the Commissioner of Inspectional Services also support the concept of terracing, provided the result is technically sound, and is not contrived to merely avoid the height limit. The height of walled terraces containing substandard lateral width (under a designated minimum width) should be included as part of the calculation of aggregate height, as suggested by the Subcommittee.

In addition, there may be structural concerns in any particular situation best analyzed in detail by appropriate professional staff. As a result, the Planning Department and the Commissioner of Inspectional Services suggest further thought be given to determining whether the 30 in. lateral minimum terrace width is the appropriate minimum width for terraces in this context. An alternate standard, suggested by the Commissioner for further investigation, would be a requirement that lateral width at minimum be equal to wall height in order for wall segments to be considered separately as to height.

Inclusion of earthen berms having greater than 1:1 slope in the "retaining wall" definition, and thereby in the "structure" category is a new concept. As a result, berms higher than 5 ft. and steeper than 45% on any side would require a special permit when placed within setbacks. However, the Planning Department wonders whether this may lead to over-regulation of what might otherwise be considered a desirable landscape feature typically placed within setback areas to achieve buffering effects. We believe this concept needs further development by the Subcommittee before consideration for adoption as part of the Zoning Ordinance.

Delegation of special permit granting authority. At the present time, special permit granting authority is the domain of the Board of Aldermen, unlike many other Massachusetts communities, where such authority is exercised by various entities, such as a Planning Board and/or a Zoning Board of Appeals. Seeking to simplify grade change regulatory mechanisms, the Subcommittee suggests retaining walls higher than 5 ft. be handled by the Zoning Board of Appeals, as the ZBA already handles variances related to placement of buildings and structures within setbacks. This approach would also allow processing such a request through a procedure geared to a more rapid calendar cycle than the multiple months involved in special permits considered by the Board of Aldermen. It may be noted that the concept of providing a less burdensome special permit path for simpler projects has been raised from time to time. In this regard, it should be noted that the Planning Board is recommending an updated Home Business Ordinance, which also includes a special permit path for home business special permits through the Planning Board. In either case, such a change would necessitate amendment of applicable provisions in Sections 30-23 and 30-24.

The Planning Department and the Commissioner of Inspectional Services support the concept of addressing retaining walls above 5 ft. through a special permit process involving the Zoning Board of Appeals, when this is the single issue under consideration for zoning relief. However, another approach is needed in the event a site plan involves not only relief pertaining to a retaining wall, but also other zoning relief, necessitating Board of Aldermen action. In such case it would be unreasonable to require the petitioner to seek relief from two special permit granting authorities rather than one. At the present time, the Commissioner of Inspectional Services interprets the existing three-foot grade change provision in such as way as to enable any retaining wall issue associated with a three foot grade change to be addressed simultaneously as part of the special permit process, and does not require a petitioner to also seek a variance for placement of wall structures. Should the Board of Aldermen agree with delegating special permit granting authority to the ZBA with respect to placement of retaining walls over 5 ft. high in setbacks, it is also suggested the

Aldermen remain the primary venue in cases where multiple zoning reliefs occur including such retaining walls.

Engineering administrative review. The Subcommittee report suggests there be a process for Engineering Division review of all single- and two-family projects increasing impervious surfaces by more than a stated threshold. At present, the Engineering Division performs various reviews governed by Department of Public Works guidelines. **(SEE ATTACHMENT C – DPW REQUIREMENTS FOR ON-SITE DRAINAGE, AND ATTACHMENT D – DPW WATER & SANITARY SEWER SERVICE RENEWAL POLICY).** While the Subcommittee does not further develop drainage, erosion, soil stability, and retaining wall considerations to any significant extent, it makes sense for this type of review to be sufficiently inclusive to accommodate concerns, which are typically looked at as part of a three-foot grade change review. The Commissioner of Inspectional Services suggests that any applicant seeking a permit which involves site alterations exceeding a three-foot grade change be subject to an Engineering Division site plan technical review, including drainage and soil stability, as part of standard permitting procedure and practice.

In addition, mandatory Engineering review is proposed for all other types of construction. At the present time, Engineering Division participation in site plan review occurs regularly as part of the City's Development Review Team process, an early step when site plan approval or a special permit case is brought to the Planning Department for preliminary review. In addition, when building permit applications are submitted to Inspectional Services, and site plans appear to trigger a threshold in the Engineering Division guidelines, such cases are referred to Engineering for site plan review both for as of right cases as well as for special permit cases. Engineering Division technical reviews are a matter of regular practice based on Department of Public Works policy. While it may be appropriate to articulate this process in a more comprehensive manner in relation to three foot grade changes and retaining walls as discussed above, it should not be necessary to amend the Zoning Ordinance to ensure an Engineering Division site plan review. It is suggested the Engineering Division, Inspectional Services Department and the Planning Department work together to craft an appropriately detailed policy and procedure for this type of review. Finally, it is noted that in case of developments containing or exceeding gross floor area of 20,000 sq. ft., Sections 30-23(2)h) and 30-24(g) require such projects to adhere to the recently adopted "green requirements", which encourage conservation of natural resources, including avoidance of unnecessary disruption of existing site topography and beneficial features.

V. SUMMARY

Regulating grade alterations under zoning is a more complex undertaking than it first seems. While Newton has regulated 3 ft grade changes through the special permit mechanism since 1987, it appears few other Massachusetts cities or towns do so through zoning. The Planning Department concurs with the Subcommittee that certain clarifications are needed within Section 30-1, Definitions, as discussed in IV. Analysis, above. However, the Planning Department is not persuaded that earthen berms, which frequently serve as perimeter buffer areas along property lines, should automatically be treated as "retaining walls" when exceeding a 1:1 slope and 5 ft., and believes further study of this suggestion is needed.

The Planning Department also supports the concept of delegating special permit granting authority to the Zoning Board of Appeals in petitions seeking the placement of retaining walls above 5 ft. within setbacks, provided this constitutes the only zoning relief needed in any particular case. However, it is also suggested that the Board of Aldermen remain the primary special permit granting venue in cases where multiple other zoning reliefs occur along with such retaining walls.

If the Board of Aldermen agrees to de-regulate grade alterations under zoning, and to “trade” such regulation for Engineering Division technical review pertaining to grading, soil stability, drainage and impervious surfaces, the Planning Department agrees that a sound technical review process is needed. However, such a technical review does not need to be articulated under the Zoning Ordinance, but can instead be handled as a matter of interdepartmental professional technical review subject to a workable procedure developed jointly by the agencies involved, such as the Engineering Division, the Inspectional Services Department, and the Planning Department, and stated in a policy memorandum describing submittal requirements and the review process.

Finally, it is noted that the combination of changes suggested above would apply universally, including to Dover protected entities, currently not subject to Section 30-5(b)(4) now proposed to be eliminated.

RECOMMENDATIONS:

- *Revise/update Section 30-1, Definitions, for terms such as “retaining wall”, “earthen berm”, and “structure.” Develop technically sound definitions of height measurement.*
- *Further study proposal to consider an “earthen berm” with slope above 1:1 and having height exceeding 5 ft. as a “retaining wall” and implications for site design and landscape buffering.*
- *Further study terracing criteria and develop technically sound definition of height measurement and lateral terrace width.*
- *Delete Section 30-5(b)(4), eliminating the existing 3 ft grade change requirement, provided a strong interdepartmental technical review process is articulated and implemented to address issues of soil stability, drainage, retaining walls, and applicable landscaping.*
- *Explore amending Section 30-5(c)(1), to the extent necessary to coordinate with interdepartmental technical review, including better definition of landscape component.*
- *Add clarifying language in appropriate location within the Zoning Ordinance providing that retaining walls in excess of 5 ft. height require a special permit when proposed within setbacks.*
- *Add new provisions within Sections 30-23 and 30-24, as necessary to authorize the Zoning Board of Appeals to review and grant special permits solely for retaining walls in excess of 5 ft. when proposed within setbacks.*
- *Articulate and implement a strong interdepartmental technical review process external to the Zoning Ordinance pursuant to Section 30-5(c)(1), to the extent necessary to address*

issues of soil stability, drainage, retaining walls, and applicable landscaping in place of three-foot grade change special permit process.

ATTACHMENTS

ATTACHMENT A – SUMMARY OF PROCEEDINGS FROM SUBCOMMITTEE.

***ATTACHMENT B – SAMPLE DEFINITIONS PUBLISHED IN A PLANNERS DICTIONARY,
AMERICAN PLANNING ASSOCIATION***

***ATTACHMENT C – DEPARTMENT OF PUBLIC WORKS REQUIREMENTS FOR ON-SITE
DRAINAGE***

***ATTACHMENT D – DEPARTMENT OF PUBLIC WORKS WATER & SANITARY SEWER SERVICE
RENEWAL POLICY***

Memorandum

3 Foot Grade Change Subcommittee

Date: 6/29/06

Re: Summary of Proceedings

The subcommittee has met on March 9, April 6, April 13 and May 19 to discuss the "three foot grade change" ordinance. The material we have reviewed includes:

- Zoning Ordinance Section 30-5 (b)(4)
- Meeting with Nancy Radzevich, Chief Land Use Planner
- Correspondence with John Lojek, Commissioner of Inspectional Services
- Conversation with John Daghljan, Associate City Engineer
- Review of Zoning Bylaws of Wellesley, Dennis, Natick, Medford, Cambridge, Weston, Watertown, Chelsea, Waltham, Malden and Needham
- Conversation with Needham Town Building Official
- Field observations and documentation of existing conditions

The Ordinance

Zoning Ordinance Section 30-5(b)(4) provides that the Board of Alderman may give a special permit for:

- (4) The placement or removal of sod, loam, clay, gravel or stone or other solid material, where the existing contours of the land are to be altered by more than three (3) feet except when a special permit has been issued for construction under the terms of this ordinance;

This is usually referred to as the “3 foot grade change” ordinance and it is generally interpreted to mean that any grade change in excess of three feet must be approved by the Board of Aldermen.

The Issue

There are two issues with the ordinance:

1. It is unclear what the ordinance is attempting to address. In practice, the ordinance arose from a situation in which a change of grade caused a drainage problem on a neighboring property so it is usually viewed as a drainage issue.
2. The provision is impossible to interpret literally or enforce. Early on the Commissioner of Inspectional Services realized that any foundation changes contours by more than 3 feet, and an “exception” was read into the ordinance for the footprint of a structure. In more recent years the exception has been expanded to include driveway access to a building, but the ordinance can probably not be fairly read to allow that exception.

Note on the Ordinance

The ordinance appears in the use sections of the zoning code and not in any dimensional provisions. As such it does not apply to any institutional uses subject to the Dover amendment.

Practical Issues

1. The Commissioner recognizes that grade changes within a footprint are inevitable for any building and it was not the intention of the ordinance to require a special permit for all buildings/foundations.
2. Newton is a very hilly city and the effect of the ordinance is much greater on lots that are located on hills. In some areas as many as 50% of the existing housing stock would be in violation of the 3’ grade change. Much of the 3’+ grade change is due to garage and parking spaces.
3. The Planning Department estimates that there are three to four petitions a year specifically for a grade change permit. Although a special permit for a three foot grade change is not required where another special permit is being sought, over the last few years it has become the custom for the relief to be requested in connection with other use permits even though under the ordinance it is not required. Many of the 3’ grade change petitions come in after the fact when the work has been done and the inspector notes it. Those petitions are particularly difficult because it is difficult to determine the preexisting grade.

4. The Planning Department has estimated that including initial intake, site visits, plan review, land use committee reports, land use hearings, working session reports, review of plan revisions, drafting of the board order and ancillary work the planning staff probably incurs 4-5 person-days of work in connection with a grade change review. The Engineering Department estimates approximately one half day of review of a 3 foot grade change permit. Neither estimate is scientific or measured.
5. The current procedure is for an Aldermanic special permit. Under the 2004 rules of the Board of Alderman, the pre-filing and pre-review periods added to the normal processing mean that as a practical matter a home owner wishing to put a retaining wall in his/her back yard may have a process which takes up to 200 days and involves engineering and legal costs in excess of an estimated \$15,000. A comparable process before the Board of Appeals would take perhaps 90 days at substantially less cost.
6. Because of the delays and expenses inherent in processing 3 foot grade change special permits, architects and owners are likely to design around the ordinance rather than seek the special permit. Thus we see many walls designed to 2 foot 11 inches with terraces or slopes behind them or other efforts specifically designed to avoid the process. Design may be driven by avoidance of process.
7. The Planning department views this as an aesthetic problem.
8. The engineering department views this as a drainage problem.

Other towns

We have reviewed the zoning by-laws of 10 abutting cities and towns. None of the zoning ordinances contain a reference to limitation on changes of grade except that the Malden zoning ordinances includes in its dimensional requirements a restriction that grades shall not exceed 25% and shall not include ledge cuts or retaining walls in excess of 6 feet.

City of Newton Case Studies/Research

In order for the group to gain an understanding of the problem we have photographed and documented 15 Newton properties as examples of existing three foot grade changes. Our group then assigned value judgments as to what we felt were, Acceptable, Borderline or Not Acceptable examples of the 3' (or more) grade change. See attached color photographs.

Substantive Issues to be addressed

The committee believes that the issues which the 3 foot grade change ordinance are intended to address are:

1. Drainage – The effect of the ordinance on drainage issues is a hit or miss affair because the exclusions for the Dover Amendment uses and for the building footprint and “garage under” by administrative decision take a good deal of bite out of the ordinance. On the other hand a retaining wall for a garden in the middle of a homeowner’s back yard can be caught in the ordinance causing substantial delay and expense. Planning, Engineering and Building officials all believe that there is possibly some threshold of area or volume which should either be allowed by right or approved by administrative review and some further threshold which may require some special permit perhaps by the simplified procedures of the Zoning Board of Appeals.
2. Aesthetics – the Aesthetics issue is a combination of the size and materials and placement of various retaining walls which create or re-enforce the grade changes. Members of the committee had questions as to whether zoning is intended to regulate aesthetics generally or only within setback areas or not at all. But most agreed that regulation of the dimensional sizes of retaining walls is within the scope of the zoning ordinance.

Proposed Remedies

By Memorandum dated April 27 the subcommittee proposed a range of possible options for changing the current 3’ grade change ordinance to address the drainage and aesthetic concerns of the City. The Zoning Task Force requested that the subcommittee specify a preferred option which appears in this Memorandum.

Caveat: Any change in the ordinance will have one of two effects. It will either make the ordinance more liberal, i.e. allow more proposals as a matter of right or make it more regulatory, i.e. make more people seek more permission. Every zoning change does one of those things or the other.

After review of the various options proposed in the April 27 Memorandum the subcommittee proposes a package of ordinance changes which would more directly address separately the two concerns expressed and addressed in the 3’ grade change discussion (i) aesthetic issue of retaining walls and (ii) drainage:

Aesthetic Issues – Retaining Walls

1. Define “Structure” in Section 30-1 to include any retaining wall in excess of 5’ high. The effect of that change would be that retaining walls in excess of 5’ would be prohibited in front, side and rear setbacks.
2. An earthen berm with a slope greater than 1:1 is a “retaining wall”.

3. A retaining wall height would be measured to be aggregated and include terraces unless the terraces are at least 30" wide. The effect of this would be to allow offsets to break up the mass of retaining walls.
4. Retaining walls in excess of 5' height should be allowed by special permit issued by the Zoning Board of Appeals.

Drainage issues

1. Engineering Department review and approval of a drainage plan required of all construction or alterations of single and two family homes increasing impervious surfaces by more than a threshold. One threshold might be the lesser of (i) 5% of the lot area or (ii) 500 s.f.;
2. Engineering Department review and approval of a drainage plan required of all other construction or alterations.

Subsequent to our meeting we have seen Brookline By-Laws Section 8.26.2 which adopts the same concept in more detailed manner. The thresholds are higher, but administrative review and an Erosion and Sediment Control Plan is required for projects over the threshold. The significant elements of the Brookline By-Law are:

- Establishment of thresholds for review
- Tiered review for smaller or larger projects
- Standards of filing of the Erosion and Sediment Control Plan
- Administrative Review

The Brookline By-Law adopts the concept of administrative review and provides details for that review. The concepts behind it are the same as the concepts adopted by the Subcommittee.

tent to which the goals and policies of a local comprehensive land are being achieved. (*Growing Smart Legislative Guidebook*)

Measurement of progress toward [a] vision of well-being in such terms as family stability, early childhood development, K-12 student achievement, air and water quality, housing affordability, crime, employment, and per capita income. (*Oregon Benchmarks*)

■ **benchmarking** A process to regularly collect, monitor, and analyze data on the achievement of the goals and policies of a local comprehensive plan. (*Growing Smart Legislative Guidebook*)

A public participation process that offers an integrated, comprehensive look at quality of life by defining community goals in terms of people, land, and economic assets. (*Noblesville, Ind.*)

■ **berm** (See also *buffer*; *screening*) An earthen mound designed to provide visual interest on a site, screen undesirable views, reduce noise, or fulfill other such purposes. (*Asheville, N.C.*)



berm

A man-made mound of earth in excess of two feet in vertical height used to shield or buffer properties from adjoining uses, highways, or noise, or to control the direction of surface water flow. (*Mequon, Wisc.*)

Man-made mound(s) of earth, 18 inches in height or higher used for decorative, screening, or buffering purposes. (*Lake Elsinore, Calif.*)

■ **berm, bank top** The point where the upward slope of the land from the water surface or the bottom of a dry excavation intersects with the existing ground elevation or crest of berm, whichever is of higher elevation. (*Indian River County, Fla.*)

■ **berth** A place or structure built along or at an angle from the shore of navigable water for the mooring of boats. (*Islip, N.Y.*)

A space within a loading facility, exclusive of driveways, aisles, maneuvering areas, ramps, columns, landscaping areas, office, and work areas, for the temporary parking of a commercial vehicle while loading or unloading goods or materials, and which abuts upon a street, alley, or other appropriate means of access. (*National City, Calif.*)

■ **best management practices** Any activities, prohibitions, practices, procedures, programs, or other measures designed to prevent or reduce the discharge of pollutants directly or indirectly into waters of the United States. Shall include but are not limited to those measures

specified in the [state authority] stormwater best management practice handbooks for municipal, industrial/commercial, and construction activity and those measures identified by the city engineer. (*Hemet, Calif.*)

That combination of conservation measures, structures, or management practices that reduces or avoids adverse impacts of development on adjoining site's

land, water or waterways, and waterbodies. (*New Castle County, Del.*)

Conservation practices or systems of practices and management measures that: (a) control soil loss and reduce water-quality degradation caused by nutrients, animal waste, toxins, and sediment; (b) minimize adverse impacts to surface water and groundwater flow, circulation patterns, and to the chemical, physical, and biological characteristics of wetlands; and (c) includes allowing proper use and storage of fertilizers/pesticides. (*Renton, Wash.*)

Methods, measures, practices, schedules of activities, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. With regard to construction these may include structural devices or nonstructural practices that are designed to prevent pollutants from entering water or to direct the flow of water. Economic, institutional, and technical factors shall be considered in developing BMPs. (*Concord, N.C.*)

■ **bicycle** Every device propelled by human power upon which any person may ride, having two tandem wheels except scooters and similar devices. (*Waukegan, Ill.*)

Any foot-propelled vehicle, irrespective of the number of wheels in contact with the ground. (*Carmel, Ind.*)

Every device, other than a tricycle, designed solely for use as a play vehicle by a child, propelled solely by human power, upon which any person may ride, having either two tandem wheels or one wheel in the front and two wheels in the rear, any of which is more than 14 inches in diameter. (*Norton, Ohio*)

A vehicle designed to operate on the ground on wheels, propelled solely by human power, upon which any person or persons may ride, and with every wheel more than 14 inches in diameter or two tandem wheels either of which is more

■ **retail sales establishment, medium-scale** Establishments of more than 10,000 square feet and not greater than 30,000 square feet of gross floor area engaged in the sale or rental of goods for consumer or household use; excluding, however, animal sales or service; building materials and/or supplies, sales, or rental; and food sales or markets. Typical uses include sale of consumer goods or art or craft objects, flower shops, gift shops, and boutiques. (*Denver, Colo.*)

■ **retail sales establishment, small-scale** Establishments of 10,000 square feet or fewer of gross floor area engaged in the sale or rental of goods for consumer or household use; excluding, however, animal sales or service; building materials and/or supplies, sales, or rental; and food sales or markets. Typical uses include sale of consumer goods or art or craft objects, flower shops, gift shops, and boutiques. (*Denver, Colo.*)

An establishment of 10,000 square feet or less of gross floor area in which 60 percent or more of the gross floor area is devoted to the sale or rental of goods or merchandise to the general public for personal or household consumption or to services incidental to the sale or rental of such goods or merchandise. (*Loveland, Colo.*)

■ **retail sales establishment, specialty** Retail operations that specialize in one type or line of merchandise. Such stores may include but are not limited to apparel stores, jewelry stores, bookstores, shoe stores, stationary stores, antique stores, and similar establishments. (*Champaign, Ill.*)

■ **retail services establishment** Establishments providing services or entertainment, as opposed to products, to the general public for personal or household use, including eating and drinking places, hotels and motels, finance, real estate and insurance, personal service, motion pictures, amusement and recreation services, health, educational, and social services, museums, and galleries. (*Maryland Heights, Mo.*)

■ **retaining wall** A wall or similar structure devised used at a grade change

to hold the soil on the up-hillside from slumping, sliding, or falling. (*Beaufort County, S.C.*)

Any fence or wall built or designed to retain or restrain lateral forces of soil or other materials, said materials being similar in height to the height of the wall. (*Fort Wayne, Ind.*)

A wall or terraced combination of walls used to retain more than 18 inches of material and not used to support, provide a foundation for, or provide a wall for a building or structure. (*Beverly Hills, Calif.*)

A structure to hold a mass of earth material at a higher position. (*Santa Clarita, Calif.*)

A man-made barrier constructed for the purpose of stabilizing soil, retarding erosion, or terracing a parcel or site. (*Cord, N.C.*)

Any fence or wall built or designed to retain or restrain lateral forces of soil or other materials, said materials being similar in height to the height of the wall. (*Fort Wayne, Ind.*)

■ **retaining wall, enclosed** A retaining wall located on a lot such that it is visually shielded by other permanent structures and cannot be seen from public streets and adjacent lots. (*Oakland, Calif.*)

■ **retention** (See also *detention definitions; stormwater definitions*) The permanent on-site maintenance of stormwater. (*Gurnee, Ill.*)

■ **retention pond** (See also *detention pond*) A wet or dry stormwater holding area, either natural or manmade, which does not have an outlet to adjoining watercourses or wetlands other than an emergency spillway. (*Grand Traverse County, Mich.*)

A pond or pool used for the permanent storage of water runoff. (*Clarkdale, Ariz.*)

A permanent, natural, or man-made structure that provides for the storage of stormwater runoff by means of a permanent pool of water. (*Hopkins, Minn.*)

A facility to collect and hold stormwater runoff with no surface outflow. (*Sandy, Ore.*)

Structures designed to collect and prevent the release of a given volume of stormwater by complete on-site storage. (*Temple Terrace, Fla.*)

Structure constructed with the purpose of diverting, passing, conveying, storing, or carrying storm water (i.e., culverts and bridges). (*Polk County, Fla.*)

A stormwater facility that is designed to accept runoff from a developed site and discharge it at a limited rate. Flows exceeding the limited rate are stored until they can be released at the limited rate (when the runoff rate into the system drops below the limited rate). A specified volume is stored indefinitely (retained) until it is displaced by runoff from another storm. (*Redmond, Wash.*)

■ **retirement community** (See *elderly housing; retirement housing*)

■ **retreat center** (See also *camp, organizational*) A facility used for professional, educational, or religious conclaves, meetings, conferences, or seminars and which may provide meals, housing, and recreation for participants during the period of the retreat or program only. Such centers may not be utilized by the general public for meals or overnight accommodations. Housing for participants may be in lodges, dormitories, sleeping cabins (with or without baths), or in such other temporary quarters as may be approved, but kitchen and dining facilities shall be located in a single centrally located building or buildings. (*Carroll County, Md.*)

A facility which (1) is operated by a non-profit organization; (2) provides opportunities for small groups of people to congregate temporarily on a site for such purposes as education, enlightenment, contemplation, renewal, or solitude; and (3) by its nature, needs to be located in a quiet, sparsely populated, natural environment. (*Moorpark, Calif.*)

■ **retreat, religious** Lodging facilities operated by religious or secular organizations for their members and not open to the general public. Includes convents and monasteries. (*Truckee, Calif.*)

■ **retrofitting** To improve or reconstruct an existing facility with the intent



David B. Cohen
Mayor

Department of Public Works Engineering Division

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Requirements for On-Site Drainage (Stormwater Management)

Subsurface on-site drainage must be provided for all proposed structures (e.g., additions, garages, retaining walls, etc.) and other impervious surfaces (e.g., driveways, patios) per schedule below. The purpose of this policy is to mitigate the effects of increased stormwater runoff onto our public streets and adjacent private property due to development. For any project that meets this criterion, a Site Plan and drainage analysis must be prepared by a Mass. Registered Professional Engineer and submitted with your Building Permit Application.

Criteria for any new structure(s) or impervious surfaces for site-drainage as follows:

- | | | | | |
|--|---|---|---|------------------|
| 1. Lot size equal to 10,000 S.F. or less | " | " | " | 400 S.F. or more |
| 2. Lot size between 10,001 S.F. and 19,999 S.F." | " | " | " | 600 S.F. or more |
| 3. Lot size 20,000 S.F. or greater | " | " | " | 800 S.F. or more |
| 4. All Non-Conforming Lots | " | " | " | review required |

1. Site grading and drainage plans shall include the following:
 - a. Topographic contours (existing and proposed) and/or adequate number of spot elevations to indicate area to be drained to each inlet.
 - b. Rim elevation and flow line elevation at each inlet and drainage structure.
 - c. Sufficient contours or spot elevations (original and final) around perimeter of building(s) and other site features to indicate extent of any filling or excavation.
 - d. The results of an on-site soil evaluation in accordance with Title V. Depict test hole/pit location on the plan (test hole should be within 25 feet of proposed infiltration structures). MADEP Form 11 – Soil Suitability Assessment for On-Site Sewage Disposal may be used as a guide for pertinent data to obtain.
 - e. Plans and Calculations shall be signed and sealed by a Registered P.E.
2. Computation to support drainage structures* (i.e., dry wells, infiltrator systems):
 - a. Based upon a design storm of 6.6 inches of precipitation in 24 hours (i.e., a Type III Rainfall, as defined by the U.S. Soil Conservation Service).
 - b. Based upon the standard methodologies set forth in U.S. Soil Conservation Service Technical Release No. 55 *Urban Hydrology for Small Watersheds* and Section 4 of U.S. Soil Conservation Service, *National Engineering Hydrology Handbook*.
 - c. Existing and proposed building sizes, driveways and natural/grassed areas.
 - d. Total area (and sub areas as applicable) proposed to drain to each drywell or approved inlet.
3. The minimum size of drain pipes shall be 4" diameter PVC.
4. The runoff from driveways and parking lots shall be captured on-site via catch basin(s) or trench drain(s) both of which will require a 4' sump and Neenah R-3705 gas trap outlet, then be connected to the on-site infiltration system. Note: gas traps are optional for single-family residential projects unless the project is located near wetlands or waterways.
5. The runoff from roofs is considered "clean" and may be collected via gutters and connected directly to the on-site infiltration system or recycled for irrigation purposes.
6. Erosion control (e.g., siltation fence or hay bales) shall be shown on plan.
7. If project is located within a wetlands/conservation and/or floodplain, then a filing must also be submitted to the Conservation Commission for their approval.

*Subsurface soil conditions may necessitate alternative approaches to infiltration.



David B. Cohen
Mayor

DEPARTMENT OF PUBLIC WORKS
ENGINEERING DIVISION
OFFICE OF THE CITY ENGINEER
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Water & Sanitary Sewer Service Renewal Policy Effective February 1, 2007

1. When a dwelling or structure is razed, then new water and sewer services must be installed.
2. When a dwelling or structure (built prior to 1970) is renovated, gutted more than 50% then new water and sewer services must be installed.
3. When a dwelling or structure (built prior to 1970) has an addition constructed that increase the footprint by more than 1,000 square feet, or increase the total square footage more than 1,000 square feet; then both water and sewer services must be updated.
4. Updated shall mean that the sewer service is installed to the City's Standard minimum standard of 6" SDR 35 PVC pipe; and the water service shall be a minimum of 1" Type K copper. Installed from the respective mains to the dwelling or structure.
5. If an existing sanitary sewer service is less than 20 years old, and is SDR 35 PVC or better (per City Engineer) then per Section 29-62 of the City Ordinances the sewer line may be tested (Closed Circuit Television- CCTV) and witnessed by the Engineering Division to verify (to the Commissioner of Public Works) its ability to be reused without replacement.
6. All renewals must conform to the City's Construction Standards.